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WHAT IS CLAIMED IS:

1. A laser delivery system for ophthalmic surgery and the like comprising:

a handpiece having a handpiece body and a hollow tip of a size suitable for insertion into a human eye, said hollow tip extending distally from the handpiece body;

a laser connector for connection to a laser source;

an optical fiber terminating at the proximal end in the laser connector and terminating at the distal end in the handpiece for transmitting laser light from a laser source to an eye to be treated;

said optical fiber extending at least partially through the handpiece tip, said tip also including a fluid path from the distal end thereof to the interior of the handpiece body;

said handpiece body having a fluid path in fluid communication with the fluid path of the tip, said handpiece body fluid path extending to the exterior of the handpiece, whereby fluid in the eye may flow through the tip and the handpiece body while laser light from the laser source is directed by the optical fiber into the eye.

2. The laser delivery system as set forth in claim 1 wherein the handpiece body fluid path includes a cavity inside the handpiece body and a port connecting said cavity to the exterior of the handpiece.

3. The laser delivery system as set forth in claim 1 further including means for refluxing material in the fluid path back into the eye.

3/ 4. The laser delivery system as set forth in claim 3² wherein the handpiece body includes the refluxing means.

4/ 5. The laser delivery system as set forth in claim 3² wherein the refluxing means includes an elastically deformable member for exerting pressure on the fluid in the fluid path to push said material out of the tip back into the eye.

5/ 6. The laser delivery system as set forth in claim 3² wherein the refluxing means is manually operable.

6/ 7. The laser delivery system as set forth in claim 3² wherein the refluxing means includes a deformable sleeve disposed axially along the handpiece.

7/ 8. The laser delivery system as set forth in claim 7⁶ wherein the deformable sleeve is disposed over a substantially rigid, tubular member, said tubular member having an orifice therethrough into which a portion of the sleeve may be pushed to exert pressure on the fluid in the fluid path.

8/ 9. The laser delivery system as set forth in claim 8⁷ wherein the deformable sleeve has a port formed therein over the orifice, said port forming a portion of the fluid path to the exterior of the handpiece.

9/ 10. The laser delivery system as set forth in claim 9⁶ wherein the deformable sleeve includes a hollow protrusion extending from the body of the sleeve, said hollow protrusion being in fluid communication with the interior of the sleeve and serving as a locator of the reflux means.

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11. The laser delivery system as set forth in claim 3² wherein the refluxing means includes a deformable bulb extending outwardly from the handpiece.

12. The laser delivery system as set forth in claim 3² wherein the refluxing means includes means for simultaneously closing the fluid path through the handpiece upon operation of the refluxing means.

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13. The laser delivery system as set forth in claim 1 wherein the handpiece body fluid path includes a cavity inside the handpiece body, a bore extending from the cavity to the exterior of the handpiece, and a tube for providing fluid communication between the bore and a suction source.

14. The laser delivery system as set forth in claim 1 wherein the optical fiber is fixedly secured to the handpiece body and is otherwise loosely disposed in the handpiece tip.

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15. The laser delivery system as set forth in claim 1 further including means for removably securing an intermediate portion of the optical fiber in a fixed position with respect to an operating field.

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16. The laser delivery system as set forth in claim 3² wherein the refluxing means includes a resilient tube, a portion of which is disposed externally of the handpiece intermediate the ends of the handpiece, said exposed portion of the resilient tube being disposed such that the user may press upon the resilient tube during use of the handpiece.

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17. A laser delivery system for ophthalmic surgery and the like comprising:

a handpiece having a handpiece body and a hollow tip of a size suitable for insertion into a human eye, said hollow tip extending distally from the handpiece body;

a laser connector for connection to a laser source;

an optical fiber terminating at the proximal end in the laser connector and terminating at the distal end in the handpiece for transmitting laser light from a laser source to an eye to be treated; and

means for removably securing an intermediate portion of the optical fiber in a fixed position with respect to an operating field.

16 18. The laser delivery system as set forth in claim 17 wherein the removably securing means is a clamp. 15

17 19. The laser delivery system as set forth in claim 18 wherein the clamp is a one-piece plastic molded part.

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20. The laser delivery system as set forth in claim 17 wherein the optical fiber extends at least partially through the handpiece tip, said tip also including a fluid path from the distal end thereof to the interior of the handpiece body, and wherein the handpiece body has a fluid path in fluid communication with the fluid path of the tip, said handpiece body fluid path extending to the exterior of the handpiece, whereby fluid in the eye may flow through the tip and the handpiece body while laser light from the laser source is directed by the optical fiber into the eye. L

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(21. The laser delivery system as set forth in claim 17 further including means for refluxing material in the fluid path back into the eye.) ✓

20/22. The laser delivery system as set forth in claim 21 ✓ 19
wherein the handpiece body includes the refluxing means.

21/23. The laser delivery system as set forth in claim 21 ✓ 19
wherein the refluxing means includes an elastically deformable member for exerting pressure on the fluid in the fluid path to push said material out of the tip back into the eye.

22/24. The laser delivery system as set forth in claim 21 ✓ 19
wherein the refluxing means is manually operable.

23/25. The laser delivery system as set forth in claim 21 ✓ 19
wherein the refluxing means includes a deformable sleeve disposed axially along the handpiece.

24/26. The laser delivery system as set forth in claim 25 ✓ 23
wherein the deformable sleeve is disposed over a substantially rigid, tubular member, said tubular member having an orifice therethrough into which a portion of the sleeve may be pushed to exert pressure on the fluid in the fluid path.

25/27. The laser delivery system as set forth in claim 21 ✓ 19
wherein the refluxing means includes a deformable bulb extending outwardly from the handpiece.

26/28. The laser delivery system as set forth in claim 21 ✓ 19
wherein the refluxing means includes means for simultaneously closing the fluid path through the handpiece upon operation of the refluxing means.

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29. The laser delivery system as set forth in claim 17 wherein the optical fiber is fixedly secured to the handpiece body and is otherwise loosely disposed in the handpiece tip.

30. A method of performing ophthalmic surgery comprising:

inserting the distal end of a probe into the interior of an eye;

aspirating material out of the interior of the eye through the probe;

applying laser energy through the probe into the interior of the eye, without replacing said probe.

31. The method as set forth in claim 30 wherein the material is subretinal fluid which is aspirated out of the eye through the probe.

32. The method as set forth in claim 31 wherein additional subretinal fluid accumulates during the surgery, further including the steps of aspirating the additional subretinal fluid after first application of laser energy, followed by additional application of laser energy after said additional subretinal fluid is aspirated, without replacing said probe.

33. The method as set forth in claim 30 further including the step of simultaneously aspirating blood from the interior of the eye and coagulating surface bleeding using laser energy.

34. The method as set forth in claim 30 further including the step of infusing medication through the probe into the eye during surgery.

29/ 35. The method as set forth in claim 34 wherein the medication is a blood clotting factor, said step of infusing medication thereby including the step of clotting blood at the site where the medication is infused.

36. The method as set forth in claim 30 further including the step of delivering an adhesive through the probe into the interior of the eye and activating the adhesive by the application of laser energy through the probe.